

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	573	(381/77).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/01 13:37
L3	19	381/77,79.ccls. and ultrasound and amplitude and phase	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/01 13:39
S2	2	yang.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:40
S3	0	"Nanyang technological university".AS. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/29 16:00
S4	0	"Nanyang technological".AS. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/29 16:00
S5	35	"Nanyang technological".AS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:29
S6	2	gan.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:27
S7	4	((("5081995") or ("5341167") or ("6052336") or ("5718227"))).PN.	USPAT	OR	OFF	2005/09/19 17:14
S8	1	381/77,79.ccls. and ultrasound and (square adj2 root) and besel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/08/01 13:39
S9	1	"381"/\$.ccls. and ultrasound and (square adj2 root) and besel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:26
S10	0	(parametric adj2 sound) and ultrasound and (square adj2 root) and besel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:07
S11	3	(parametric adj2 sound) and ultrasound and (square adj2 root)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:07
S12	1	381/77,79.ccls. and steering and (square adj2 root) and besel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:08
S13	2	"381"/\$.ccls. and steering and (square adj2 root) and besel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:08
S14	5	381/77,79.ccls. and (ultrasound adj2 carrier)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:09

## EAST Search History

S15	0	(steering adj2 beam) same (ultrasound adj2 carrier)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:35
S16	2	(steer adj2 beam) same (ultrasound adj2 carrier)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:09
S17	21	381/77,79.ccls. and ultrasound	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:42
S18	2	ER.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:37
S19	5	LEE.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:28
S20	0	kamapi.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:28
S22	6	wang.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:28
S23	1	"Nanyang".AS. and ultrasound	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:40
S24	1	EP-973152-\$.did.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:32
S25	1	(steer\$3 adj2 beam) and (ultrasound adj2 carrier) and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:35
S26	1	(steer\$3 adj4 beam) and (ultrasound adj2 carrier) and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:36
S27	51	(steer\$3 adj4 beam) and (ultrasound) and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:36
S28	1	(steer\$3 adj4 beam) same (ultrasound) same sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:36
S29	16	(steer\$3 adj4 beam) and (ultrasound same sidelobe)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:36
S30	1	"381"/\$.ccls. and ultrasound and bessel and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:42

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S31	1	"381"/\$.ccls. and ultrasound and bessel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:42
S32	173	ultrasound and bessel	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 13:42
S33	16	ultrasound and bessel and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:17
S34	4	ultrasound and filterban\$2	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 14:03
S35	17	ultrasound and (weight adj2 functions)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 14:04
S36	23	ultrasound and ((square adj2 root) same gain)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/04/30 14:05
S37	76	"Nanyang".AS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 13:34
S38	0	"381"/\$.ccls. and beamsteer\$3 and (parametric adj2 array)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 13:38
S39	1	beamsteer\$3 and (parametric adj2 array)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 13:35
S40	8	"381"/\$.ccls. and steer\$3 and (parametric adj2 array)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:06
S41	47	steer\$3 and (parametric adj2 array)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 13:44
S42	42	steer\$3 and (parametric adj2 array) and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 13:41
S43	2	((("5911692") or ("6658141")).PN.	USPAT	OR	OFF	2005/06/15 13:48
S44	1	"381"/\$.ccls. and (square adj2 root) same (alterna\$5 with gain with positive with negative)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:28
S45	1	"381"/\$.ccls. and (square adj2 root) same (gain with positive with negative)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:27
S46	480	(flip\$4) with ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:29

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S47	2	modulat\$4 with (flip\$4) with ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:30
S48	5	modulat\$4 with (positive with negative) with ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 15:33
S49	0	ultrasonic same filterbank	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 16:15
S50	22	ultrasonic same (band-limit\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 16:21
S51	0	WO-9849868-\$.did.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 16:22
S52	0	WO-09849868-\$.did.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 16:22
S53	0	WO-98049868-\$.did.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/06/15 16:22
S54	14	pompei.in. and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:20
S55	1	ultrasonic same (square adj2 root) same gain same (altern\$5)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 10:43
S56	7	ultrasonic same (square adj2 root) same gain	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:23
S57	8	(ultrasonic or supersonic or inaudible) same (square adj2 root) same gain	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:23
S58	2	sha.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:36
S59	2	sha.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:37
S60	3	sha.in. and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:37
S61	343	yang.in. and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:38

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S62	17	yang.in. and ultrasonic and sound and beam	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:39
S63	14	yang.in. and ultrasonic same sound	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:39
S64	7	"Nanyang".AS. and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/09/19 17:40
S65	323	ultrasonic same (different adj3 phases)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 10:44
S66	1	(ultrasonic near2 carrier) same (different adj3 phases)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 10:44
S67	32	(ultrasonic near3 waves) same (different adj3 phases)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:00
S68	2	((("6658141") or ("5911692"))).PN.	USPAT	OR	OFF	2005/10/14 11:00
S69	48	ultrasound same sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:08
S70	5	ultrasound same sidelobe and besse	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:10
S71	17	ultrasound same (sidelobe with (reduction or suppress\$4))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:38
S72	5	ultrasound and (bessel near3 zero\$2) and sidelobe	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 12:09
S73	8	(audio or carrier) with (zero\$2 adj2 order adj2 bessel)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:41
S74	3	(zero\$2 adj2 order adj2 bessel) same ultrasound	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 11:41
S75	0	ultrasound same (reflect\$3 with billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 15:18
S76	2	ultrasound and (reflect\$3 with billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:23
S77	1	(reflect\$3 adj3 audio adj4 billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:17

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S78	1	reflect\$3 with ((audio or sound) adj4 billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:33
S79	0	(reflect\$3 adj2 from adj3 billboard) same (audio or sound)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:27
S80	0	(reflect\$3 adj2 from adj3 billboard) and (audio or sound)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:27
S81	385	reflect\$3 with (audio or sound) with (billboard or panel or bulletin or sign)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:30
S82	2	reflect\$3 with (audio or sound) with (billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:29
S83	382	reflect\$3 with (audio or sound) with (panel or sign)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:46
S84	3	reflect\$3 with (audio or sound) with ((panel or sign) near3 outdoor)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:32
S85	32	reflect\$3 with ((panel or sign) near3 outdoor)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:32
S86	116	(audio or sound) same billboard	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:43
S87	0	ultrasound same (billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:34
S88	22	ultrasound and (billboard)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:34
S89	2	(reflect\$3 or reverber\$6 or boun\$4 or return) same (audio or sound) same billboard	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:44
S90	1659	(reflect\$3 or reverber\$6 or boun\$4 or return) same (audio or sound) same (billboard or panel or sign)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:44
S91	3	(reflect\$3 or reverber\$6 or boun\$4 or return) same (audio or sound) same ((billboard or panel or sign) near3 outdoor)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:45
S92	14	(reflect\$3 or reverber\$6 or boun\$4 or return) same (audio or sound) same ((billboard or panel or sign) near3 outside)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:45

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S93	119	reflect\$3 with (audio or sound) with (panel or sign) and (outdoor or outside)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:48
S94	243	reflect\$3 with (audio or sound) with (panel or sign or display) and (outdoor or outside)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:48
S95	36	(reflect\$3 or return\$3 or boun\$4 or bend or mirror) adj3 (audio or sound) adj4 (panel or sign or display) and (outdoor or outside)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 13:49
S96	27	(two with ultrasonic with carrier with generat\$4)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:35
S97	0	("5327396").URPN.	USPAT	OR	OFF	2005/10/14 14:33
S98	0	(ultrasonic same filterbank)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:35
S99	7	(ultrasonic and filterbank)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:44
S100	2	ultrasonic same harmonics same (psycho adj2 acoustic)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:45
S101	2	ultrasonic and harmonics same (psycho adj2 acoustic)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 14:45
S102	2407	(adjust\$3 or chang\$3) with (stepper adj2 motor)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 15:19
S103	4	(adjust\$3 or chang\$3) with (stepper adj2 motor) with rotat\$4 with (transduc\$3 or \$4speak\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 16:07
S104	0	(audio) same (square adj2 root) same ((alterna\$3 or polarity) near3 gains) same modulat\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 16:08
S105	0	(square adj2 root) same ((alterna\$3 or polarity) near3 gains) same modulat\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 16:08
S106	0	(square adj2 root) same ((alterna\$3 or polarity) near3 gain) same modulat\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/14 16:08
S107	3	(square adj2 root) same ((alterna\$3 or polarity) near3 gain) and modulat\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/26 12:25
S108	0	(square adj2 root) same (positivie same negative same audio) and modulat\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/26 12:26

## EAST Search History

S10 9	0	(square adj2 root) same (positive same negative same audio)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2005/10/26 12:26
S11 1	2	yang.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:16
S11 2	0	S111 and independent\$2 and amplitude and phase and carrier and audio and signal	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:17
S11 3	0	S111 and independent\$2	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:17
S11 4	14	381/77,79,97,191.ccls. and ultrasound and phase and amplitude and adjust\$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:58
S11 5	809	(381/97,191).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:21
S11 6	67	phase same amplitude same adjust\$3 same independent\$2 same carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/02/14 14:22
S11 7	3	phase same amplitude same adjust\$3 same independent\$2 same carrier and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:37
S11 8	7	phase with amplitude with adjust\$3 with independent\$2 with carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:35
S11 9	6	phase same amplitude same adjust\$3 same (independent\$2 separate\$2) same carrier and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:38
S12 0	253	phase same (amplitude magnitude volume gain) same adjust\$3 same (independent\$2 separate\$2) same carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:39
S12 1	7	(phase same (amplitude magnitude volume gain) same adjust\$3 same (independent\$2 separate\$2) same carrier) and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:39
S12 2	2	yang.in. and (sound adj2 beams)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:41
S12 3	0	S122 and adjust\$3 and amplitude and phase and independent\$2 and carrier and audio and signal	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:41



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S12 4	15	yang.in. and adjust\$3 and amplitude and phase and independent\$2 and carrier and audio and signal	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:43
S12 5	81	yang.in. and adjust\$3 and amplitude and phase and independent\$2 and carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:43
S12 6	81	yang.in. and (adjust\$3 and amplitude and phase and independent\$2 and carrier )	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:44
S12 7	0	S122 and (adjust\$3 and amplitude and phase and independent\$2 and carrier )	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:44
S12 8	0	S122 and (amplitude and phase and independent\$2 and carrier )	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:44
S12 9	2	S122 and (amplitude and phase and carrier )	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 11:44
S13 0	5	381/77,79,97,191.ccls. and phase same amplitude same adjust\$3 same (independent\$2 separate\$2)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:41
S13 1	1526	phase same amplitude same adjust\$3 same (independent\$2 separate\$2)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:00
S13 2	7	phase same amplitude same adjust\$3 same (independent\$2 separate\$2) and audio and ultrasonic	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:01
S13 3	108	phase same amplitude same adjust\$3 same (independent\$2 separate\$2) and audio and carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:41
S13 4	6	phase same amplitude same adjust\$3 same (independent\$2 separate\$2) same audio same carrier	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:01
S13 5	11	"381"/\$.ccls. and carrier and audio and (phase same (gain amplitude) same (adjust\$3 same (independent\$2 separate\$2)))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:55
S13 6	511	(381/111,116).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:55
S13 7	9	S136 and ultrasonic and carrier and (gain amplitude) and phase	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/05 12:56

## EAST Search History

S13 9	239	(367/138).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/06 12:55
S14 0	17	367/92,138.ccls. and (gain amplitude) same phase same (separate\$2 independent\$2)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/14 15:05
S14 1	33	norris.in. and parametric and \$speak\$4	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/14 14:16
S14 2	146	(367/92).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/14 15:04
S14 3	19	367/92,138.ccls. and audio	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2006/04/14 15:05